



1998-99 CATS ASSESSMENT

Open-Response Item Scoring Worksheet

Grade 10—Reading

Type of Passage: Information

The **academic expectation** addressed by “Incredible Thinking Cars” is

1.2 Students make sense of the variety of materials they read.

The **core content** assessed by this item includes

- Analyze the content as it applies to real-life issues.

Incredible Thinking Cars

Using information from the article, discuss two advantages and two disadvantages that result from recent advances in auto technology.



SCORING GUIDE

Grade 10 Reading

Score	Description
4	Student thoroughly discusses two advantages and two disadvantages that result from recent advances in auto technology. Response includes information from the article.
3	Student discusses two advantages and two disadvantages that result from recent advances in auto technology. OR Response discusses two advantages and one disadvantage or one advantage and two disadvantages that result from recent advances in auto technology. In both cases, the response is general but includes information from the article.
2	Student addresses two advantages and/or two disadvantages that result from recent advances in auto technology. OR Student addresses one advantage and one disadvantage that result from recent advances in auto technology.
1	Response identifies one advantage and/or one disadvantage that result from recent advances in auto technology. OR Response discusses safe driving in general.
0	Response is totally incorrect or irrelevant.
Blank	No response.

Examples of Advantages:

- Safety
- Less driver error/danger
- Cruise control
- Night vision
- Infrared vision
- Sense danger

Examples of Disadvantages:

- Cost
- Over-dependence on technology
- Need quick reaction time
- More instrumentation to deal with
- Mandatory increased expense



READING PASSAGE

Grade 10

Car manufacturers are constantly enhancing and improving the safety of the cars they market to consumers, but are they going too far? Read the following article, then answer the questions that follow.

The Incredible Thinking Cars

Tom Strongman

Are you ready for cars that think for themselves? In just a few years they may be doing exactly that, without your knowledge.

Air bags and anti-lock brakes, now almost universally available, are just the tip of the auto safety iceberg. Thanks to aerospace technology and high-speed computers, our cars may become automotive “Big Brothers” that look out for our safety and well-being even when we aren’t.

■ A car that senses skids, or even slight deviations in direction, and applies one of its brakes to keep the vehicle going straight.

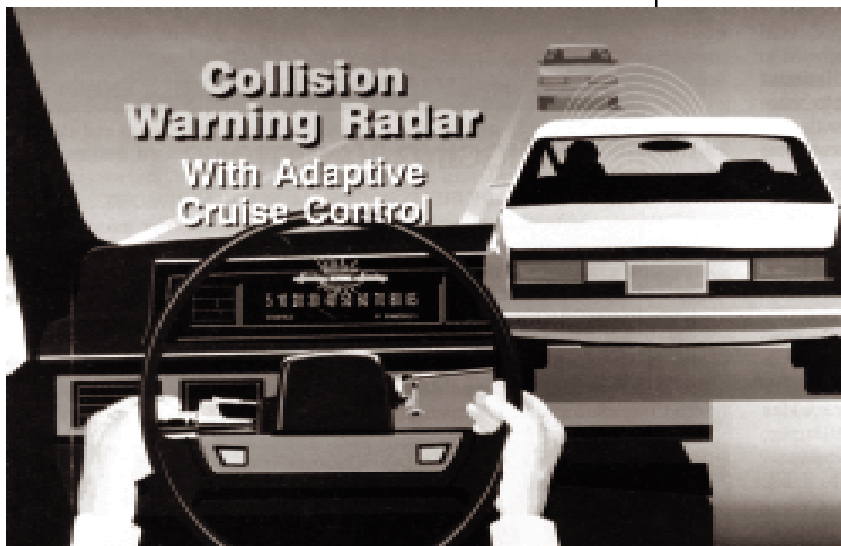
While almost all automakers are working on such systems, General Motors Corp., Ford Motor Co. and Mercedes-Benz AG have been the most vocal about their developments.

Intelligent Cruise Control

The first step in this brave new world of automotive safety is likely to be adaptive, or intelligent, cruise control. It uses radar or infrared beams to provide minimum spacing between vehicles, and even applies the brakes if necessary.

Right now, many Greyhound buses are equipped with a similar, but less sophisticated, system.

Morgan Whitney, an executive engineer in Ford’s electronics division, said we might see adaptive cruise control by the end of the decade.



Just imagine:

■ Cruise control that automatically slows your car to keep it from getting too close to the vehicle in front of you.

■ A collision-avoidance warning system that costs about the same as a moonroof and alerts you to objects in your path that require evasive action.

■ Infrared sensors that extend a driver’s night vision to see people walking in the dark or someone hiding in a garage.

■ Computer-controlled video cameras that “read” highway lane markings and warn you to take corrective action.

All-weather Night Vision

Ford’s All-Weather/Night Vision (AWNV) project is considerably more sophisticated than adaptive cruise control and would likely be the next step, Whitney said.

AWNV is the brainchild of Ford’s Design Program manager, Eduardo Peralta. Peralta said AWNV is capable of “differentiating between two cars a yard apart at a distance of 500 yards,” due to advances in electronic processing of the signal from a small radar antenna mounted in the vehicle.

That means AWNV could project symbols of obstacles in the driver’s field of view on a head-up display, which makes the images appear to be in front



READING PASSAGE

Grade 10

of the windshield so the driver doesn't have to refocus his or her eyes. AWNV's computer could change the symbols' shapes, sizes and colors as they got closer and required some evasive action.

Infrared Vision

GM, in conjunction with its Hughes Aircraft subsidiary and Delco electronics, is developing night vision enhancement. GM's system uses an infrared sensor that scans the area ahead, detecting variations in temperature that are translated into visual images displayed on a television screen in the dash.

This system sees things that are beyond the car's headlights, and can allow a driver to see in dark areas.

Sensing Danger

Mercedes-Benz has announced that by 1996 some of its S-Class sedans will have a new safety system that "senses danger" and automatically restores directional control by applying a front or rear brake.

The Mercedes system notes differences between the driver's steering inputs and what the vehicle is actually doing, then applies corrective action. It enhances driver control and helps maintain directional stability while turning and while driving straight ahead.

Whether you want them or not, these safety features are likely to find their way into production and, according to the manufacturers, will make driving safer and will enhance the driving experience.

Tom Strongman is automotive editor of *The Kansas City Star*.

"The Incredible Thinking Cars" by Tom Strongman/*Home and Away Magazine*. Used with permission.



ANNOTATED STUDENT RESPONSE

Grade 10 Reading

Sample 4-Point Response of Student Work

Student Response

Recent advances in auto technology have both advantages and disadvantages surrounding them. On the good side, a car which has this higher technology can increase the driver's safety. Also, a driver wouldn't have to worry as much about constantly having to concentrate on the road — the car would do it automatically. With all these new safety gadgets, passengers in an auto would of course be much more secure, and the cruise control, collision-avoidance warning system, and the computer-controlled video cameras would allow the driver to be more aware of immediate obstacles and road directions without having to strain his neck and eyes. As good as all that seems, there could very well be drawbacks. Some people might not want to have these things in their rides, but the cars of the future might unthinkingly include them as the "basics." That aspect could lead to lower car sales in the next few years. Also, the computers which would power these new technological advancements are just machines — and could possibly break down. If a driver was relying completely on his cruise control to keep him a sensible distance from the cars in front of him, and the computer suddenly went wrong, an accident would very likely occur. This technology could force a person to stop using his own mind and lead to a catastrophe.

← Student identifies two advantages of new auto technology (i.e., safety and automation).

← Student thoroughly discusses the two advantages, using information from the article.

← Student identifies and thoroughly discusses one disadvantage of new auto technology (i.e., lack of choice).

← Student identifies and thoroughly discusses a second disadvantage of new auto technology (i.e., reliance on machines).

Overall, the student demonstrates a thorough understanding of the text by thoughtfully discussing both advantages and disadvantages of new auto technology. Student uses material from the text to reach conclusions.



ANNOTATED STUDENT RESPONSE

Grade 10 Reading

Sample 4-Point Response of Student Work

Student Response

All pieces of new technology equipment are accompanied by disadvantages and advantages. With change comes risks and benefits. Car companies must keep this sentence in mind when developing "The Incredible Thinking Cars." With new products, advantages are clearly seen, but sometimes we tend to overlook the disadvantages.

The advantages of the thinking cars are less accidents and fatalities, and less manual attention and concentration. The intelligent cruise control, all-weather night vision, infrared vision, and danger sensors are going to save thousands of lives on the road. Because a machine is in charge, there is a smaller chance of human mistakes which can cause a fatality. Less manual attention and concentration is required, because a machine is doing the work. Therefore, if you take your mind off the road you aren't doomed.

Two disadvantages are lack of driving knowledge and lack of choice by the consumer. If your systems in your car failed and you had relied too much on the technology you could find yourself out of control on the highway, not knowing how to drive. This new technology, if automatically installed, may turn away a potential customer who can't afford the gadgets and isn't ready for change. Just let the car think for itself, and we will think for ourselves.

← Student identifies two advantages of new auto technology (i.e., fewer accidents and less manual driving).

← Student thoroughly discusses the two advantages, using information from the article.

← Student identifies two disadvantages of new auto technology (i.e., reliance on machines and lack of choice).

← Student thoroughly discusses the two disadvantages.

Overall, the student demonstrates a thorough understanding of the text by thoughtfully discussing both advantages and disadvantages of new auto technology. Student uses material from the text to reach conclusions.



ANNOTATED STUDENT RESPONSE

Grade 10 Reading

Sample 3-Point Response of Student Work

Student Response

One advantage in new car technologies is allowing drivers to see better during night. This will help because you'd be able to see all that was going on and be ready to make a quick decision if necessary. One disadvantage is the fact that drivers would no longer have the say-so of decisions made while in the car. The car would control them. The driver might feel the decision the car will make is wrong or dangerous and can't stop it. Another advantage is the cruise control. Nowadays people travel too close and accidents occur more easily. With this new technology, cars will travel at safe distances where they'll have room to stop if needed. Another disadvantage is the cost. Cars are already very expensive and if car companies include these new technologies then car prices will be outrageous.

← Student identifies and discusses one advantage of new auto technology (i.e., improved night vision).

← Student identifies and discusses one disadvantage of new auto technology (i.e., lack of choice).

← Student identifies and discusses a second advantage of new auto technology (i.e., room to stop).

← Student identifies and discusses a second disadvantage of new auto technology (i.e., cost).

Overall, the student demonstrates a clear understanding of the text by discussing both advantages and disadvantages of new auto technology. Student includes material from the text. Response lacks the depth needed to achieve a score of 4.



ANNOTATED STUDENT RESPONSE

Grade 10 Reading

Sample 2-Point Response of Student Work

Student Response

Two advantages to the recent advances in auto technology are that the driver can see farther ahead at night than they could before. It also has an intelligent cruise control that keeps a minimum distance between cars, and it even applies the brakes if needed.

Two disadvantages are that the driver may not want this on their vehicle, but may not have a choice. Another one is that driving is supposed to be something to look forward to, but if you can't do your own driving then why bother.



Student addresses two advantages of new auto technology (i.e., improved night vision and minimum distance between cars).



Student addresses two disadvantages of new auto technology (i.e., lack of choice and lack of enjoyment).

Overall, the student demonstrates some understanding of the text by addressing both advantages and disadvantages of new auto technology. Student includes some material from the text.

Sample 1-Point Response of Student Work

Student Response

In the recent advances in auto technology, there have been advantages and disadvantages. Some of the advantages are the keeping safe of pedestrians and of the driver and passengers.



Student identifies one advantage of new auto technology (i.e., safety).

Overall, the student demonstrates minimal understanding of the text by identifying only one advantage and no disadvantages of new auto technology.



INSTRUCTIONAL STRATEGIES

Grade 10 Reading

The open-response item **“Incredible Thinking Cars”** assesses students’ skills in reading and understanding an informational text. By successfully responding to this item, students demonstrate their ability to read a passage that presents information in a positive light and deduce the negative aspects of that information. The instructional strategies below present ideas for helping students explore and master these skills.

- A. Provide students with a copy of “The Incredible Thinking Cars.” Then have students work individually, in pairs, in small groups, and/or as a class to complete any or all of the following activities:
 1. Analyze the article and list all the possible advantages of the advances in auto technology described in the article.
 2. Brainstorm and list all the possible disadvantages of the advances in auto technology described in the article.
 3. Consider the different organizational strategies for framing an essay on these advantages and disadvantages.
 4. Discuss the strengths and/or weaknesses of alternating one advantage with one disadvantage, and of placing advantages first or last.
- B. Provide students with advertisements and/or promotions that present only positive aspects (e.g., the material about the Electronic Guardian that was released from last year’s test). Then have students work individually, in pairs, in small groups, and/or as a class to complete any or all of the following activities:
 1. List the advantages that are presented in these advertisements or promotions.
 2. Discuss possible disadvantages.
 3. Draw and defend a conclusion as to whether the advantages outweigh the disadvantages.
- C. Lead a class discussion on the advantages and disadvantages of modern technologies such as cell phones, word processors, calculators, and the Internet. Then have students work individually, in pairs, in small groups, and/or as a class to complete any or all of the following activities:
 1. Write short essays developing one or more of the ideas generated from the discussion.
 2. Create similar lists of advantages and disadvantages for a technological advance from an earlier time (e.g., airplanes, television, telephone, automobiles).
- D. Lead a class discussion on the similarities of advantage/disadvantage, pro/con, for/against, and how they relate to the technique of comparison and contrast. Then have students work individually, in pairs, in small groups, and/or as a class to complete any or all of the following activities:
 1. Find editorials that take a stand, and analyze them to find two of the author’s arguments to support that stand. Then create two opposing arguments.
 2. Create their own editorials, supporting their point of view with at least two arguments. Then trade editorials with another student and create at least two opposing arguments to the other student’s point of view.
 3. Examine examples of comparison and contrast and analyze the balance achieved by the author as well as the organizational plan used.
 4. Practice the technique of comparison and contrast, making sure to supply a balanced number of ideas for each side.